

The Influence of Sensation Seeking and Self-control on Adolescents' Risk Decision-Making Behavior

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Abstract: This study focuses on the effects of sensation seeking and self-control on risky decision-making among college students. The Chinese version of the Sensation Seeking Scale, the Self-Control Scale and an adapted simulation of the Balloon Adventure Task were used to study 314 university students. The study showed that factors such as self-control and restrained recreation were significantly and negatively correlated with sensation seeking and its disinhibition dimension ($r < 0.01$); in the acquisition framework, individuals' risky decisions were positively correlated with the temptation resistance dimension of self-control ($r < 0.05$), and the temptation resistance dimension of self-control had a significant effect on individuals' risky decisions ($p < 0.05$). In addition, the interaction between sensation seeking and self-control on risky decision making among college students was significant ($p < 0.05$). This study reveals the correlation between sensation seeking and self-control among college students and the underlying mechanisms, enriching the research on college student development.

Keywords: college students; feeling seeking; self-control; risk decision making

1. Introduction

In college years, college students need to make many choices alone in the face of various certificates, postgraduate entrance examination and employment. Therefore, in recent years, more and more scholars from outside China have conducted relevant research on risk decisions. Risk decision making is a choice made when a decision maker is faced with the consequences of two or more unclear options[1]. Kahneman (1992) has shown that individuals tend to avoid wind and tend to risk preference in the face of losses[2]. Research has shown that decision makers with low level of self-control prefer risk seeking in risk selection[3]; The decision makers in the high sensation-seeking group preferred more risk preference in risk decisions than the low sensation-seeking group[4]. Therefore, this study will investigate the influence of college students' sensory-seeking tendency and self-control ability on risk decision-making.

One of the factors important for risk decision making is sensation seeking. After Zuckerman and zoob (1964), on the basis of sensory deprivation experiments, Zuckerman (1994) further refined the concept of sensory seeking through research: sensory seeking is the pursuit of changing, novel feelings and experiences, and the tendency to acquire these experiences through various risk-taking behaviors[5]. The influence of sensory seeking on the individual is reflected in all aspects of life, and these effects are reflected in the existing theories and empirical evidence. First, sensation seeking can affect the health risk behaviors of college students, who meet the needs of sensation seeking through behaviors such as smoking and drinking[6]. Second, feeling-seeking influences people's decisions. While risk preference is another important factor affecting addictive behavior, the previous study found that sensory seeking directly affects risk preference and indirectly affects addictive behavior[7]. Similarly, sensation seeking has a significant positive correlation with network dependence. They generally pursue novel stimuli, so their risk assessment ability is not mature. Compared with lower sensation seekers, they tend to underestimate the risk of risk-taking behavior. Sensory seeking also affects individual emotions, and high sensation seekers are more likely to conflict with others in daily interpersonal activities due to their strong emotional experience[6]. In addition, it is found that high sensory seekers have more high-risk sexual behavior [8], and the current study on the relationship between sensation seeking and high-risk sexual behavior are mainly teenagers 18-25 years of age, while college students are in this group[9]. Thus, sensation-seeking as a personality trait has a broad impact on our mental health as well as on our social life.

Self-control refers to the ability of an individual to actively regulate behavior and make his personal value more in line with social expectations, which can trigger or prevent certain behaviors, such as

delayed gratification, restraint of impulsive behavior and other[10]. Self-control is also divided into trait self-control and state self-control. The influence of state self-control on people will change with the environment, while the influence of trait self-control on people is more stable[11]. Research on self-control defects of mobile phone dependence showed that the self-control ability of college students is significantly lower than[12]. In conclusion, self-control has a very important impact on the development and adaptation of individuals, so the further study of self-control is very necessary.

Previous research only showed that college students self control and risk decision are significantly related[3], college students' feeling seeking and risk decision also have significant correlation[13], feeling seeking and self-control is significant negative correlation[14], so this study will take college students as the research object, assuming the correlation between feeling seeking and self-control and risk decision, explore the feeling seeking and self-control on risk decision. By further verifying the relationship between the three, it can help us to further understand the influencing factors of college students' risk decision, to promote the good development of college students and promote the progress of social civilization.

2. Study

2.1 Study Subjects

In this study, 319 college students were selected from 319 college students. A total of 319 questionnaires and 314 questionnaires were valid, with an effective rate of 98.43%.

2.2 Study tools

2.2.1 The Chinese version of college students feel seeking scale

The scale used by the institute is the Chinese version of the questionnaire compiled by Zhao Shan and Zhang Ming (2004) after factor analysis. The reliability index of 36 questions is above 0.8, indicating that the stability of this questionnaire is very high.

2.2.2 Self-Control Scale (SCS)

The self-control ability questionnaire was developed by Tangney in 2004, Tan Shuhua and Guo Yongyu revised the Chinese version of the scale in 2008. The questionnaire included 19 questions. Reliability is 0.850. It has a relatively high reliability and validity.

2.2.3 Simulation balloon adventure mission

This study uses an adapted simulated balloon risk task. Simulation balloon adventure task (BART, Balloon Analogue Risk Task) is a dynamic risk decision-making process, which can truly reflect the risk decision situation in real life, and has more ecological validity. The simulation balloon task is adapted to form two different risk decision tasks: acquisition framework and loss framework. The two tasks have the same problems and the scheme is essentially the same, but the description is different, one is positive description and the other is negative description.

With a positive description under the acquisition framework, the problem is: imagine that you need to inflate a balloon by get the balloon, but the balloon may explode at any time. Now there are two different options for you to choose. Please choose what you think is appropriate:

Plan 1, to inflate the balloon, the balloon did not explode, get 20 points, that is, 20 yuan money;

Plan 2, to inflate the balloon, 50% of the possible balloon did not explode, get 40 points, that is, 40 yuan, 50% of the possible balloon explosion, no profit.

Conduct the negative description under the framework of the loss, the problem is the same as the positive description, the scheme description is different:

Plan 1, to inflate the balloon, the balloon explosion, the loss of 20 points, that is, 20 yuan;

Plan 2, to inflate the balloon, 50% of the possible balloon explosion, the loss of 40 points, that is, 40 yuan, 50% of the possible balloon did not explode, no loss.

2.3 Data analysis

Data were analyzed using SPSS.

2.4 Results

2.4.1 Relevant research on sensation seeking, self-control and risk decision-making among college students

Risk decision is a dichotomous variable, so it is necessary to assign values to risk aversion and risk preference, including 0 for risk aversion and 1 for risk preference.

Table 1: Correlation between sensory seeking and self-control and its various dimensions of college students

	A	B	C	D	E	F	G	H	I	J	K
A	1										
B	0.818**	1									
C	0.727**	0.265**	1								
D	0.620**	0.265**	0.381**	1							
E	0.733**	0.422**	0.533**	0.525**	1						
F	0.779**	0.576**	0.495**	0.360**	0.453**	1					
G	-0.175**	-0.167**	-0.061	-0.047	-0.161**	-0.189**	1				
H	-0.039	-0.067	0.026	0.048	-0.074	-0.051	0.888**	1			
I	-0.302**	-0.243**	-0.165**	-0.170**	-0.221**	-0.313**	0.718	0.318**	1		
J	0.032	-0.069	0.047	0.118*	0.082	0.038	0.079	0.061	0.070	1	
K	-0.075	-0.072	-0.033	-0.089	-0.025	-0.043	0.025	0.054	-0.030	0.070	1

Note: * $P < 0.05$, ** $P < 0.01$ A = self-control B = control impulse C = health habit D = resist temptation E = concentrate on work F = restraint entertainment G = feeling seeking H = excitement and risk seeking I = disinhibition J = gain risk decision K = loss, risk decision under framework

2.4.2 Regression analysis of the factors influencing risk decision-making among college students

The dependent variable in this study was risk decision, and categorical variable, and it was also divided into gain and loss framework, while sensation seeking and self-control were continuous variables. First, they were grouped according to the framework of gain and loss, and then the regression analysis of dependent variables on independent variables. Because the dependent variable in this study was a categorical variable, binary logistic regression was used for analysis in this study.

The results of the correlation analysis in Table 1 show that the temptation dimension of self-control is correlated with the risk decision of college students ($r < 0.05$), therefore, only binary logistic regressions of the temptation resistance dimension of self-control and risky decisions were performed. According to Table 1, under the acquisition framework, temptation resistance has significant influence on college students ($P < 0.05$). The higher the level of temptation resistance, the more the risk aversion; the lower the level of temptation resistance, the more the risk preference. Under the loss framework, the influence of resisting temptation on college students' risk decisions was not significant ($P > 0.05$).

Since the dependent variable risk decision in this study was a categorical variable, the interaction was analyzed by binary logistic regression. The results from the binary logistic regression in Table 2 show that there was a significant interaction between sensation seeking and self-control on undergraduate risk decision making under the acquisition framework ($P < 0.05$). In the loss framework, sensation-seeking and self-control insignificantly interactively influenced risk decision-making among college students ($P > 0.05$).

Table 2: Impact of resisting temptation on risk decision-making under the framework of gain and loss of college students logistic regression results

framework	Resist temptation	β	SE	Wals	df	p	Exp (B)
Acquisition framework	Resist temptation	-0.096*	0.046	4.271	1	0.039	1.100
Losses framework	Resist temptation	0.076	0.048	2.476	1	0.116	0.927

Note: * $P < 0.05$, ** $P < 0.01$

3. Discussion

3.1 Correlation analysis of sensation seeking, self-control and risk decision making among college students

From the results of this study, first, self-control and its five dimensions, sensory seeking and its two dimensions showed a significant positive correlation, and between the five dimensions of self-control and between the two dimensions of sensory seeking.

Moreover, sensation seeking was significantly negatively associated with self-control and its control impulse, concentration on work, and restraint recreation dimensions, namely, higher levels of sensation seeking, and lower self-control, impulse control, concentration on work, and restraint recreation. The disinhibition dimension of sensory seeking was significantly negatively correlated with self-control and its various sub-dimensions. There is no correlation between the excitement and risk-seeking dimensions and self-control and its subdimensions. This result may be due to the fact that excitement and adventure-seeking is the yearning for adventure sports such as skiing, which does not violate social rules, and does not require individuals to suppress this impulse. Therefore, there is no significant correlation between the excitement and adventure-seeking dimensions and self-control ability and their dimensions.

Finally, for risk decisions under the framework of gain and loss, risk decisions under the framework are positively correlated with the temptation resistance dimension of self-control.

3.2 Regression analysis of the influencing factors of the risk decision-making of college students

The results of the binary Logistic regression analysis of self-controlled temptation resistance to risk decision show that under the acquisition framework, the influence of college students. The higher the level of temptation resistance, the more inclined to risk aversion; the lower the level of temptation resistance, the more inclined to risk preference[3]. The results are consistent with previous studies[3][4]. The results of the binary logistic regression analysis of risk decision making by sensory seeking and self-control showed that sensory seeking and self-control were interacted significantly under the acquisition framework, i. e. the influence of sensory seeking on risk decision making varied according to self-control ability.

4. Conclusion

- (1) There is a significant negative correlation between feeling seeking and self-control.
- (2) In the acquisition framework, there is a significant positive relationship between an individual's risky decision making and the temptation resistance dimension under self-control. This suggests that the ability to resist temptation is a key factor influencing the risky decisions of university students.
- (3) Significant interaction between sensation seeking and self-control on risky decision-making among university students in the acquisition framework.

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